United States Environmental Protection Agency

Enforcement and Compliance Assurance (5502G)

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EPA

Superfund At Work

Hazardous Waste Cleanup Efforts Nationwide

Bayou Sorrel Site Profile

Site Description:
Former waste disposal facility

Site Size: 265 acres

Primary Contaminants:
Pesticide wastes, sulfides, heavy metals, phenols, and organic compounds

Potential Range of Health Risks:
Central nervous system disorders, cancers and leukemia

Nearby Population Affected:
20 people within two mile radius

Ecological Concerns:
Wetlands destruction; endangered species (American bald eagle, peregrine falcon, and ivory-billed woodpecker)

Year Listed on the NPL: 1982

EPA Region: 6

State: Louisiana

Congressional District: 8

Success in Brief

Louisiana's First Completed Superfund Cleanup

Every Superfund site poses unique challenges. No two sites have the same set of contaminants or waste contributors. Each geographical location has a different set of variables that require considerations of weather, ecological damage, soil composition, and public exposure. The one thing most sites have in common is contaminated ground water. Bayou Sorrel was no exception and was the first site in Louisiana to complete construction activities cleaning up mismanaged hazardous waste.

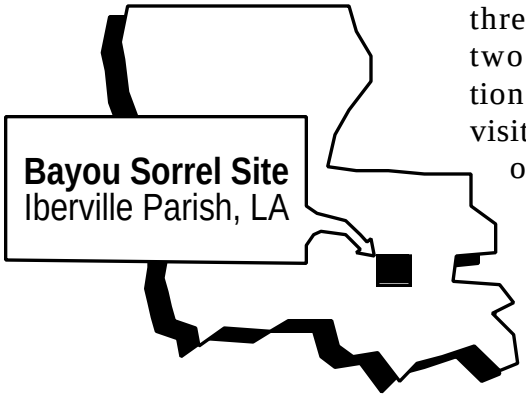
A network of waste generators cooperated with the U.S. Environmental Protection Agency (EPA) and state officials to efficiently complete the $20 million effort. Their determination was in marked contrast to the view that the "Grand River Pits" were mosquito-ridden wastelands of little value. Indeed, the list of accomplishments favored the environment and all those critters that make their home in the "swamp", from bald eagles to catfish.

- One million cubic feet of contaminated soil and sediments were entombed beneath two multi-layered, protective caps;
- 30-foot-deep concrete barriers halted the migration of pollution into ground water and adjacent wetlands.

A 30-year maintenance and monitoring plan keeps waste contributors on call for those days that are sure to come when floods and hurricanes bring the river's surge up and over the levee.

Louisiana: sportsman's paradise. Cleanup worker takes a break from on-site construction.

A Site Snapshot



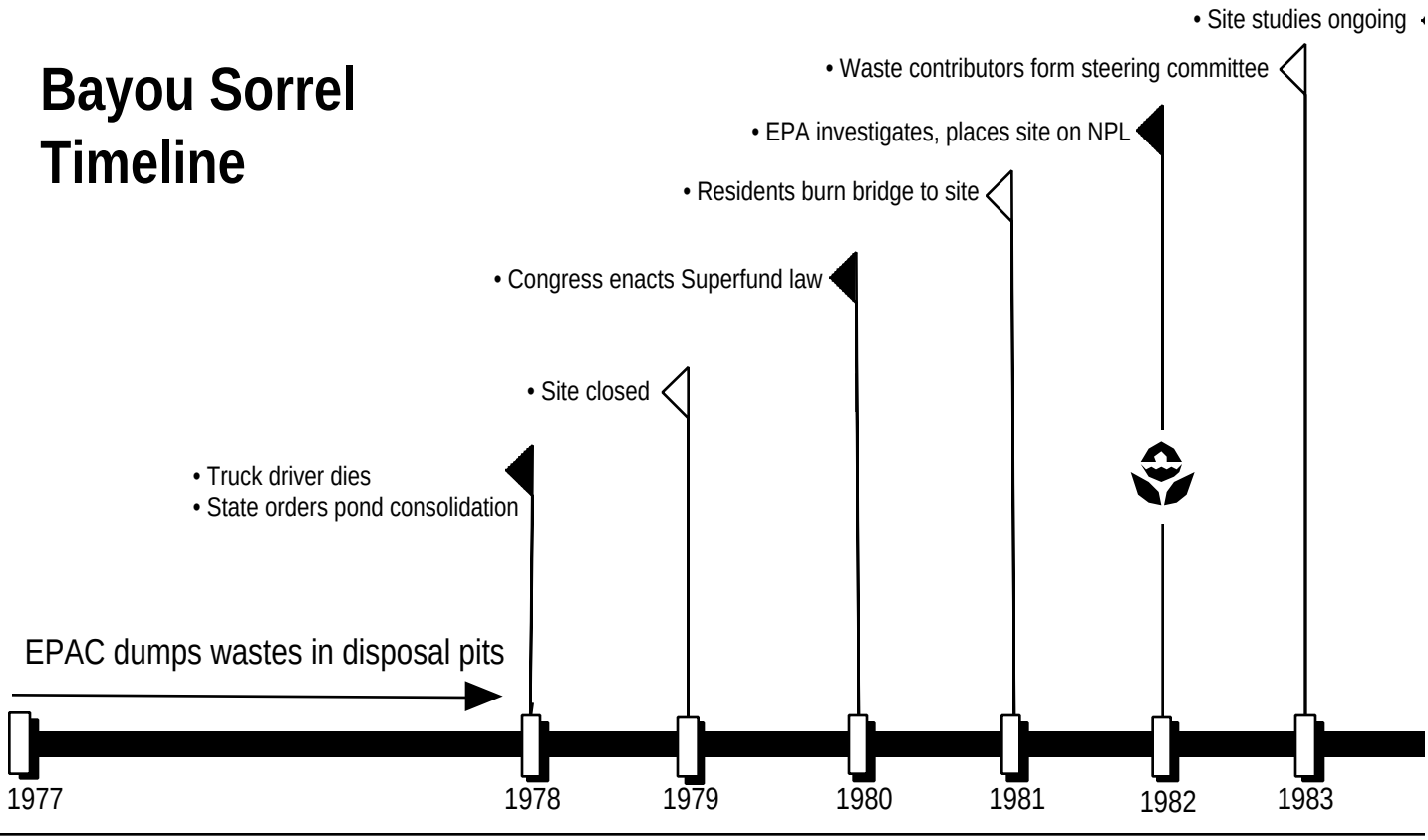
The Bayou Sorrel site in Iberville Parish, is in a sparsely populated rural area approximately 20 miles southwest of Baton Rouge and six miles northwest of the town of Bayou Sorrel. The site is behind the east Atchafalya Basin Floodway Protection Levee on the Upper Grand River. Only three homes are located within two miles but the local population increases seasonally by visitors attracted to fishing and other recreational activities.

The Environmental Purification Advancement Corporation (EPAC) operated at the site between 1977 and 1978, using approximately 50 of the site's 265 acres for waste disposal. Petroleum processors, pesticide manufacturers, and other industrial facilities sent their wastes to EPAC. Incompatible chemicals were mixed haphazardly in sludge pits, liquid waste ponds, drum burial cells, and a "landfarm" (where contaminated soil was laid out in rows and periodically turned for exposure to air).

In one short year, EPAC managed to pollute a million cubic feet of soil with heavy metals, phenols, oil and grease, asbestos, cyanide, sulfides, and various organic and inorganic compounds. Because the site is below sea level, the potential for flooding was great and contaminants spread into the wetlands to the south.

Three endangered species take sanctuary there: the American bald eagle, the peregrine falcon, and the ivory-billed woodpecker. But fish, crustacean, reptiles, and other animals also were threatened with a fouled habitat.

Bayou Sorrel Timeline



Unconscionable Dumping Takes Toll On "Grand River Pits"

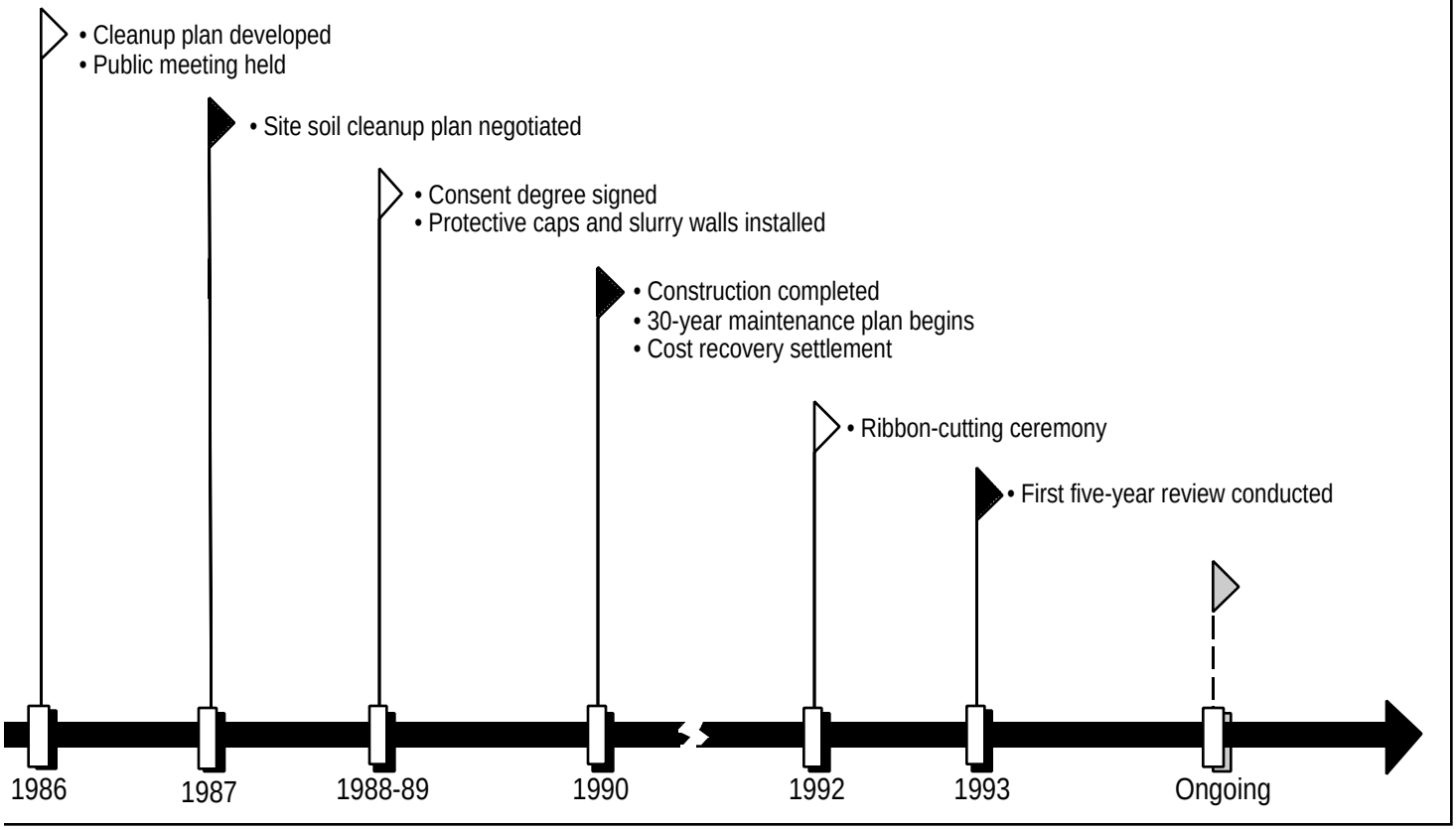
Worker's Death Prompts Investigation

In the summer of 1978, a truck driver died at the Bayou Sorrel site after inhaling hydrogen sulfide gas. Liquid wastes from his truck apparently reacted with an incompatible chemical brew in one of EPAC's pits, causing a toxic cloud of gas. State and federal regulators then inspected the site and found unknown mixtures of wastes in the large, open, unlicensed ponds. A state court ordered the site closed in September. Under Louisiana supervision, EPAC reportedly pumped the contents of three liquid waste ponds into a fourth where solids were concentrated by evaporation and landfarming. Workers covered the ponds with clay soils and left in June, 1979.

Residents Complain by Burning a Bridge

For two years after the closing, area residents complained of foul odors coming from the site. While investigating, the Louisiana Department of Environmental Quality (LDEQ) found pollutants oozing from the unlined disposal pits. Contaminated surface water in the wetlands interfered with fishing, hunting, and camping. To protest the continuing pollution from flooding and to stop trucks from dumping more waste into the "Grand River Pits", area residents burned a bridge leading to the site.

Public outrage was a factor at many other sites nationwide that brought about passage of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). This law established a federal program to clean up abandoned or uncontrolled hazardous waste sites. Instead of using taxpayer dollars, EPA uses a "Superfund" derived from environmental taxes on crude oil and chemical feedstocks. When LDEQ asked EPA to investigate the site, scientists found major air and soil contamination. In Septem-



ber 1982, EPA added Bayou Sorrel to the National Priorities List (NPL), the roster of sites requiring comprehensive cleanup.

EPA Identifies Waste Contributors

EPA notified 91 companies of their potential liability and asked them to conduct site investigations. When negotiations stalled, EPA performed various studies between March 1984 and February 1986.

Sampling Underscores Need for Action

In mid-1983, a steering committee of 23 companies formed to coordinate cleanup efforts and to expedite future settlements. Twenty-seven other parties who contributed relatively small volumes of waste were not part of the steering committee, but chose later to enter de minimis settlements with EPA, bringing the total number of cooperating parties to 50.

The steering committee investigated the site between October 1983 and November 1984, using the information gathered to complement EPA site studies. An amazing one million cubic feet of soil and sediment were contaminated with pesticide and herbicide concentrations, sulfide-containing wastes, and spent equipment wash solutions. Many of the contaminants had migrated to surface water and had entered the area ground water.

An auger drills a ground water sampling and monitoring well, one of 43 on site.

EPA's Cleanup Plan

Following a public comment period, EPA issued the Bayou Sorrel cleanup plan in November 1986 which included:

- Regrading the site to limit runoff of contaminants, control erosion, and divert storm water from the waste ponds;
- Capping two former disposal areas with waterproof materials and installing a venting system to reduce the buildup of methane gas beneath the cap;
- Installing underground

concrete barriers or "slurry walls" around the waste ponds to stop contaminant migration into ground water;
- Enclosing capped areas with security fences and building access roads to allow continued use of adjacent recreational land; and
- Installing and maintaining a monitoring system to ensure protection of ground water.

Parties Agree to Perform Cleanup

Negotiations between EPA and the steering committee spanned much of 1987. In March 1988, the steering committee and EPA signed a legal document called a consent decree, in which 50 parties agreed to perform the $20 million cleanup, including long-term monitoring. In addition, another party signed a separate agreement in 1990 to reimburse $180,000 of EPA's past costs at the site. Cost recovery actions continue against a third party to recover the remaining $200,000 in past costs.

Construction began in July 1988, but was briefly interrupted in the spring of 1989 by heavy flooding that nearly submerged the site. Crews resumed and completed efforts in September, 1990.

Worker forms one of many seams in the multi-layer protective cap.

Maintenance Continues for 30 Years

Because wastes are being left on site, EPA required an extensive, 30-year monitoring program of the two soil caps and slurry walls as well as quarterly sampling of 43 ground water monitoring wells. Sampling will enable EPA to identify area ground water degradation before wastes migrate off site.

The settling parties will maintain the structural integrity of the caps and the vegetation grown on them, and maintain security fences and access roads. Both EPA and LDEQ will oversee these activities by conducting semi-annual inspections. The first of several planned five-year reviews was

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conducted during the summer of 1993. With help from the state, EPA will continue to evaluate the need for further cleanup, repair, or monitoring.

Bayou Sorrel was the first Superfund site in Louisiana to complete construction. After the final "close out" report in 1992, EPA held a public ribbon-cutting ceremony with members of the community. The site is expected to be deleted from Superfund's National Priorities list in 1998.

Success at Bayou Sorrel

Extensive chemical contamination was cleaned up through the joint efforts of EPA, the State of Louisiana, and cooperating parties. Installation of multi-layer caps, slurry walls, and gas venting systems were paid for by private parties under fair but flexible enforcement. Ground water monitoring will continue for years to come. Because Bayou Sorrel was the first Superfund completion in Louisiana, the site will be the first NPL deletion for the state.

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